Amendment to the claims

Please cancel claims 31-34, amend claim 35, and add new claims 36-39, all as appears in the following claim listing which replaces all prior versions and listings of the claims in this application.

1-15.(Canceled)

16.(Previously Presented) A method of transmitting a wireless signal comprising:

identifying a signal space for wireless communication, the signal space including a range of frequencies;

creating a waveform for the signal space, the waveform organized into a plurality of sub-bands, each one of the plurality of sub-bands defined by one of a plurality of time-frequency tiles characterized by a bandwidth and an integration time;

adapting at least one of the bandwidth and the integration time of one of the plurality of the time-frequency tiles to provide a channel having a tile size selected to maintain a predetermined phase coherency across the time-frequency tile;

modulating a data signal onto the waveform using direct sequence spreading for each one of the plurality of sub-bands, thereby providing a transmit signal; and

transmitting the transmit signal into the signal space.

17.(Previously Presented) The method of claim 16 wherein creating a waveform includes adding a preamble that includes an indication of the bandwidth and the integration time of at least one of the plurality of time-frequency tiles.

18.(Previously Presented) The method of claim 17 wherein the preamble includes an indication of one or more of an M-ary alphabet size and a data rate for the at least one of the plurality of time-frequency tiles.

19.(Previously Presented) The method of claim 18 wherein at least one of the m-ary alphabet size and the data rate vary over time.

20.(Previously Presented) The method of claim 19 wherein the m-ary alphabet size and the data rate vary from burst to burst in a packetized data system.

21.(Previously Presented) The method of claim 16 further comprising adapting the bandwidth and the integration time of all of the time-frequency tiles to provide a plurality of channels each having a coherent time-bandwidth product.

22.(Previously Presented) The method of claim 16 wherein all of the time-frequency tiles have a common bandwidth and a common integration time.

23.(Previously Presented) The method of claim 16 wherein adapting at least one of the bandwidth and the integration time includes changing at least one of the bandwidth and the integration time between a plurality of bursts of data transmission.

24.(Previously Presented) The method of claim 16 wherein an actual phase coherency of a channel is determined according to one or more of experiment, radio frequency monitoring, and an estimate for an environment.

25.(Previously Presented) The method of claim 16 wherein the signal space is used for ad hoc mobile network communications.

26.(Previously Presented) The method of claim 16 wherein the data signal includes ad hoc mobile network data.

27.(Previously Presented) The method of claim 16 wherein modulating the data signal onto the waveform includes forward error correction encoding the data signal and interleaving of the data signal, thereby providing signal diversity across time and frequency.

28.(Previously Presented) The method of claim 16 further comprising excising one or more of a plurality of carriers of the transmit signal by using a zero amplitude signal.

29.(Previously Presented) The method of claim 16 further comprising scrambling the data signal with a non-linear Transmission Security (TRANSEC) pseudo-noise overlay.

30.(Previously Presented) The method of claim 16 wherein the transmit signal carries the data signal at a magnitude substantially within a noise floor for the signal space.

31-34.(Canceled)

35.(Amended) A device comprising:

a data source providing a data signal;

a transmitter adapted to create a waveform for a signal space including a range of frequencies, the waveform organized into a plurality of sub-bands, each one of the plurality of sub-bands defined by one of a plurality of time-frequency tiles characterized by a bandwidth and an integration time, the waveform including a preamble that includes the bandwidth and the integration time of the plurality of time-frequency tiles, the transmitter further adapted to adjust the bandwidth and the length of time of one of the time-frequency tiles to provide a channel having a tile size selected to maintain a predetermined phase coherency across the time-frequency tile; and

a modulator adapted to modulate the data signal onto the waveform using direct sequence spreading for each one of the plurality sub-bands, thereby ~~provide~~ providing a transmit signal; ~~and~~

~~a transmitter that transmits~~ wherein the transmitter is further adapted to transmit the transmit signal into the signal space.

36.(New) The device of claim 35 wherein the waveform includes a preamble including an indication of the bandwidth and the integration time of at least one of the plurality of time-frequency tiles.

37.(New) The device of claim 35 wherein the transmitter is further adapted to adjust the bandwidth and the integration time of all of the time-frequency tiles to provide a plurality of channels each having a coherent time-bandwidth product.

38.(New) The device of claim 37 wherein all of the time-frequency tiles have a common bandwidth and a common integration time.